

Information Collection Request Supporting Statement: Section A Visual Scanning Training for Older Drivers

The National Highway Traffic Safety Administration (NHTSA) of the U.S. Department of Transportation (USDOT) is seeking approval from the Office of Management and Budget (OMB) to collect information from licensed older drivers to determine (1) their eligibility to participate in a study of the effectiveness of a visual scanning training protocol to improve driving safety, (2) their driving performance during on-road evaluations to measure training effectiveness, and (3) their attitudes about the training procedures and their perceptions of its benefits.

As the effect of age-related decline in visual search and attention on safe driving abilities has become better understood, researchers have developed different strategies and techniques to ameliorate it. The visual scanning training protocol that is the focus of this study was designed to be delivered by a generalist occupational therapist (OT). The OT conducts the one-on-one sessions in a clinical setting, targeting visual field expansion, simultaneous processing of multiple visual stimuli, and ocular skill (visual search routine) exercises. NHTSA's study "Validation of Rehabilitation Training Programs for Older Drivers" (DOT HS 811 749; April 2013) provided a preliminary analysis of the training's effectiveness. While the results were encouraging, the research team concluded that widespread promotion of this intervention would require additional evidence.

Following efforts to refine and streamline the training protocol, a larger sample of healthy older drivers will receive the updated training program. This study will measure effectiveness of the training by comparison of road test scores to a control group while also gauging drivers' attitudes and perceptions about the training experience. The original training program developer and supporting research team will direct and perform this study.

A.1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection.

a. Circumstances making the collection necessary

NHTSA was established to reduce the number of deaths, injuries, and economic losses resulting from motor vehicle crashes on the Nation's highways. As part of this statutory mandate, NHTSA is authorized to conduct research as a foundation for the development of traffic safety programs. Older adults comprise an increasing proportion of the licensed population, and exposure-based analyses of crash risk have consistently shown increased rates of involvement for drivers as they age into their 70's and beyond. Further, these crash risk studies have identified particular situations where older drivers are most at risk. These situations often require significant visual search and attention, such as maneuvers at intersections and during merging. The purpose of this information collection, and related research, is to ameliorate the effect of age-related declines in visual search and attention on safe driving abilities and thus reduce crashes involving driver drivers.

b. Statute authorizing the collection of information

Title 23, United States Code, Chapter 4, Section 403 authorizes the Secretary of Transportation to conduct research and development activities, including demonstration projects and the collection and analysis of highway and motor vehicle safety data and related information needed

to carry out this section, with respect to all aspects of highway and traffic safety systems and conditions relating to - vehicle, highway, driver, passenger, motorcyclist, bicyclist, and pedestrian characteristics; accident causation and investigations; and human behavioral factors and their effect on highway and traffic safety, including distracted driving. [See 23 U.S.C. 403(b)(1)(A)(i), 23 U.S.C. 403(b)(1)(A)(ii), 23 U.S.C. 403(b)(1)(B)(iii)].

A.2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.

TransAnalytics, LLC, will conduct this study under a task order on an Indefinite Delivery, Indefinite Quantity contract with NHTSA. Study participation will be voluntary and solicited through informational sessions delivered by a research team member to residents of a continuing care retirement community (CCRC). During the presentation, attendees will be invited to join the research study. A member of the TransAnalytics research team will ask those who indicate an interest in participating five questions to determine their eligibility to participate in the study (see Form 1400: Screening Questions).

For those who are eligible for the study, a research team member will make appointments to answer any questions participants may have about the study and to obtain their signatures on an informed consent agreement approved by an Institutional Review Board (see Form 1401: Informed Consent). The research team member also will conduct a screen of color vision and binocular vision during the appointment to further determine eligibility.

The 90 consented study participants will be randomly assigned within age and sex categories to either participation in the visual scanning training program (a series of four one-hour one-on-one training sessions) or to a control (placebo) activity for the same number of hours as the visual training protocol. All participants will also undergo three, one-hour on-road evaluations by a Certified Driver Rehabilitation Specialist (CDRS) over the course of the study. The CDRS will provide instructions about what route to follow and will score how safely the participant drives using standard procedures and criteria that are broadly accepted in the profession. The CDRS scores will be used to determine the effectiveness of the training protocol relative to the control (placebo) group.

The 45 study participants enrolled in the visual scanning training group will, at the completion of training, complete a brief questionnaire to determine whether they believe the training will help them to be a safer driver, whether they would recommend the training to friends or relatives, and what they would pay for such training (see Form 1402: Training Feedback Questions). The training feedback, as well as the CDRS road test scores, will be used to evaluate the effectiveness of the training.

A.3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical or other technological collection techniques or other information technology. Also describe any consideration of using information technology to reduce burden.

NHTSA intends to recruit potential participants through public solicitations in community settings. The administrator of a Continuing Care Retirement Community has agreed to post fliers around the facility and print recruiting advertisements in the monthly newsletters to residents. To collect the qualifying (screening) information, NHTSA will engage in a conversation with interested information session attendees. No automated, electronic, mechanical, or other technological collection techniques are planned to obtain screening information.

A rehabilitation hospital has agreed to collaborate and will provide generalist OTs to deliver the visual scanning training protocol. With participants' consent, audio recordings of the scanning training sessions will be made, and any comments about the training offered by participants will be noted by research staff during review of the recordings. Training participants also will be asked to complete a paper-and-pencil feedback form at the end of the training.

An independent CDRS will perform the three driving evaluations on routes designed to provide multiple instances of driving tasks that require visual scanning. The CDRS will evaluate the typical aspects of driver performance monitored by a CDRS using a paper scoring sheet and will ensure safety by use of a passenger-side brake (if necessary). The CDRS will be assisted by a research assistant riding in the back seat who will focus exclusively on scoring the extent to which scanning behavior is directed toward the most likely source of hazards with the aid of a special mirror or electronic device.

A.4. Describe efforts to identify duplication. Show specifically why any similar information, already available cannot be used or modified for use for the purposes described in Item 2 above.

The visual scanning training protocol that is the focus of this study was designed to be delivered by an OT. The OT conducts the one-on-one sessions in a clinical setting, targeting visual field expansion, simultaneous processing of multiple visual stimuli, and ocular skill (visual search routine) exercises. NHTSA's study "Validation of Rehabilitation Training Programs for Older Drivers" (DOT HS 811 749; April 2013) provided a preliminary analysis of the training's effectiveness. While the results were encouraging, the research team concluded that widespread promotion of this intervention would require additional evidence. Following efforts to refine and streamline the training protocol, a larger sample of healthy older drivers will receive the updated training program. This study will measure effectiveness of the training by comparison of CDRS road test scores to a control group while also gauging drivers' attitudes and perceptions about the training experience. This information collection is necessary because the training has not been evaluated since the 2013 study.

A.5. If the collection of information involves small businesses or other small entities, describe the methods used to minimize burden.

The collection of information does not involve small businesses except insofar as data collection activities will be supported by a small business contractor to NHTSA.

A.6. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.

The population of older drivers is expanding. At the same time, studies examining glance behavior upon the approach to and negotiation through intersections have found that older drivers scan left and right less often and are more likely to focus straight ahead or in the intended direction of travel compared to younger drivers. Older drivers also looked at their side view and rear view mirrors significantly less frequently and failed to make direct looks to their blind spots significantly more often than younger drivers. Finally, older drivers with a narrowed attentional visual field (AVF) in the vertical direction were significantly more likely than older drivers without a narrowed AVF to run red lights. These findings may explain older drivers' overrepresentation in crashes at intersections and when changing lanes compared to drivers of all ages. If this collection is not conducted, NHTSA would not have the evidence it needs to determine the effectiveness of visual training techniques for addressing these behaviors and could miss an opportunity to help reduce older drivers' crash risk.

A.7. Explain any special circumstances that require the collection to be conducted in a manner inconsistent with the guidelines set forth in 5 CFR 1320.6.

No special circumstances require the collection to be conducted in a manner inconsistent with the guidelines in 5 CFR 1320.6.

A.8. Provide a citation for the FEDERAL REGISTER document soliciting comments on this collection of information, a summary of all public comments responding to the notice, and a description of the agency's actions in response to the comments. Describe efforts to consult with persons outside the agency to obtain their views.

A copy of the 60-day Federal Register Notice, which notified the public of NHTSA's intent to conduct this information collection and provided a 60-day comment period, was published on July, 17, 2017 (Vol. 82, No. 135, Pages 32758-32759). No comments were entered into the NHTSA docket in response to the 60-day Federal Register Notice.

A copy of a second, 30-day Federal Register Notice (Vol. 82, No. 225, Pages 55920-55921), which announced that this information collection request will be forwarded to OMB, was published on November 24, 2017.

A.9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.

No payment or gift will be provided to respondents for the qualifying interview (screening). Study participants will be offered \$200 as compensation for completing the training sessions and on-road evaluations. Each study participant will receive a \$100 gift card as compensation for participation after completing the second and the third (final) evaluations. Participants also will receive feedback regarding their performance on the driving evaluation (following the final evaluation); paying for this type of individual driving evaluation would generally cost \$300 to \$400 per person.

Our past experience indicates that anything less than the proposed \$200 total compensation would likely result in failure to recruit enough participants to provide adequate statistical power. In addition to the time demands related to the training and evaluations, many older adults avoid driving evaluations such as is included in the proposed study because they believe that a poor score will lead to their losing their license, even though this could not happen to participants in the proposed study. Recent studies by NHTSA have confirmed that this level of compensation is necessary to meet recruiting requirements. These studies, which are still in the field or in final report preparation, include *Older Driver Compliance with Licensing Restrictions* (OMB 2127-0702, expires 8/31/2017), *Older Drivers and Navigation Devices* (OMB 2127-0710, expires 9/30/2018) and *Mild Cognitive Impairment and Driving Performance* (OMB 2127-0712, expires 9/30/2018). These three studies used incentives ranging from \$100 to \$150 per participant, and yet recruitment remained difficult. More recently, *Older Drivers' Self-Regulation and Exposure* (OMB2127-0722, expires 1/31/2020) proposed a \$200 incentive. In light of our recent field experience, we believe that the compensation of \$200 per participant is justified and necessary.

A.10. Describe any assurance of confidentiality provided to respondents

Older drivers who are qualified and choose to participate in this study will be asked to execute an informed consent form. The consent form promises that no individual results and no personal information will be published and that no personal results will be shared with any licensing regulatory authority. All published results will provide only summary statistics that cannot be used to identify any individual or individual's responses.

A.11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior or attitudes, religious beliefs, and other matters that are commonly considered private.

No questions commonly considered private or sensitive in nature will be asked as part of this study.

A.12. Provide estimates of the hour burden of the collection of information on the respondents.

The total estimated burden for this information collection is 690. The following table

summarizes the calculation of this estimated burden.

Table 1. Calculation of Burden Hours

	Participants	Minutes per Participant	Estimated Burden (rounded to nearest hour)
Form 1400: Screening	135	3	7 hours
Form 1401: Consent Form	90	450	675 hours
Form 1402: Training Feedback	45	10	8 hours
<i>Total Estimated Burden Hours</i>			<i>690 hours</i>

Form 1400 ensures that interested respondents, who will have attended an informational session that describes the inclusion and exclusion criteria, are properly qualified for the study. We expect that we will need to approach 135 respondents to achieve the target of 90 potentially eligible participants since we estimate that about one-third will not be eligible. Respondents will take an estimated three minutes to complete the questions, resulting in an estimated burden of six hours and 45 minutes.

The burden associated with Form 1401 includes both the consenting process and the time burden associated with completing the study. The consenting process, which includes reading and signing the consent form (Form 1401) and a vision screening, for each of the 90 participants will average 30 minutes in length. All study participants will be randomly assigned within age and gender categories to either participation in the visual scanning training program or to a control (placebo) activity for the same number of hours. Both groups will experience four one-hour sessions for a total training burden of four hours per participant. All participants will also undergo three one-hour on-road evaluations by a CDRS over the course of the study. The total estimated burden per participant for the consenting process (30 minutes), training (four hours), and on-road evaluations (three hours) is seven hours and 30 minutes for a total estimated burden of 675 hours across all 90 participants.

After completing all training sessions, the 45 treatment group participants will complete Form 1402 to collect attitudes and beliefs about the visual scanning training protocol. The form will take 10 minutes per respondent for a total estimated burden of seven hours 30 minutes.

A.13. Provide an estimate of the total annual cost to the respondents or record keepers resulting from the collection of information.

There are no record keeping costs to the respondents, and there is no preparation of data required or expected of respondents. Participants do not incur either (a) capital and start-up costs, or (b) operation, maintenance, and purchase costs as a result of participating in the study. We expect that most respondents will be retired from employment. If employed, opportunity costs to respondents for participation in all study activities can be calculated based on mean hourly wages provided by the Bureau of Labor Statistics for All Occupations

(http://www.bls.gov/oes/current/oes_va.htm#00-0000). If all respondents are employed, the total annual cost to respondents would be about \$17,140 (690 hours X \$24.84/hour).

A.14. Provide estimates of the annualized cost to the Federal Government.

Total estimated cost to the Government for this one-time information collection is \$222,523. Since data collection is expected to take less than a year, the annualized cost is the same.

A.15. Explain the reasons for any program changes or adjustments in Items 13 or 14 of the OMB 83-I.

This is a new information collection. As such, it requires a program change to add the estimated 690 hours for the new collection to NHTSA's existing burden.

A.16. For collection of information whose results will be published, outline plans for tabulation and publication.

No information from the qualifying interview or informed consent form will be published. The current plan is for the contractor to produce a draft technical report in 2019 with publication of a final technical report in 2020. The technical report will provide summary statistics and tables as well as the results of statistical analysis of the information, but it will not include any personal information.

A.17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.

NHTSA will display the expiration date for OMB approval.

A.18. Explain each exception to the certification statement identified in Item 19, "Certification for Paperwork Reduction Act Submissions" of the OMB Form 83-I.

No exceptions to the certification are made.